

Claims:

1. A method for recording the boiling curve of liquids, in particular petroleum products and/or solvents; in which a sample amount of the liquid to be analyzed is evaporated and subsequently condensed, wherein the vapor temperature and the respectively evaporated amount of liquid are monitored, characterized in that the sample amount is dosed by a filling means, particularly a pump, that the filling means and the condensate collection chamber are brought to a defined, and preferably identical, temperature level, and that the condensed volume is determined volumetrically in a manner known per se and the distillation residue of the sample amount is determined by weighing.
- 15 2. A method according to claim 1, characterized in that the sample amount is pumped into a sample dish which is moved by the aid of a lifting drive into a gas-tight connection with the distillation apparatus and pressed at the same.
- 20 3. A method according to claim 1 or 2, characterized in that the filling means for the dosing of the sample amount, after completion of the measuring procedure, via at least one valve is switched to remove the condensate by suction.
- 25 4. A method according to claim 1, 2 or 3, characterized in that the sample dish is discarded after one-time use.
- 30 5. A method according to any one of claims 1 to 4, characterized in that sample is used in an amount of from 1 to 12 ml, preferably about 6 ml, that the distillation rate is chosen such that the time between the onset of boiling and the end of boiling is less than 15 minutes, and that the distillation residue determined by weighing is converted to 35 volume.

6. A device for carrying out the method according to any one of claims 1 to 5, characterized in that a filling means (1), particularly a pump, for filling in a sample amount is connected with a duct leading to a sample dish (7), that the sample dish (7) is connected with a distillation apparatus, particularly a condenser (15), that the filling means and the distillation apparatus, particularly the condenser (15), are made of well heat-conducting material, particularly metal, and that the filling means (1) and the condenser (15) are connected to a temperature controller.

7. A device according to claim 6, characterized in that the sample dish (7) is arranged on a movable support (8), which is connected with an adjustment drive (9), by which the edge of the sample dish (7) can be pressed at the edge of the connection opening of a distillation column (10) that follows the sample dish (7).

8. A device according to claim 6 or 7, characterized in that the temperature controller is designed as an electric cooler and/or heater using, in particular, Peltier elements (5, 17).

9. A device according to any one of claims 6 to 8, characterized in that the filling means (1) and the distillation apparatus are arranged in a common portable housing.

10. A device according to any one of claims 6 to 9, characterized in that temperature sensors (6, 16) are provided in both the filling means (1) and the condenser (15).

11. A device according to any one of claims 6 to 10, characterized in that the adjustment drive (9) for the sample dish (7) is designed as a geared motor.

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12. A device according to any one of claims 6 to 11, characterized in that the edge of the sample dish (7) and the

edge of the connection opening of the distillation column (10) are designed to be conical, hollow-conical or ball-shaped, so as to ensure the gas-tight connection of the sample dish (7) with the distillation apparatus while applying the pressing 5 pressure created by the adjustment drive (9).

13. A device according to any one of claims 6 to 12, characterized in that the distillation column (10) is surrounded by an insulation means (12).

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14. A device according to any one of claims 6 to 13, characterized in that the condenser (15) comprises an axial zone with reduced diameter of a material transparent to light and, in particular, infrared light, particularly glass, which 15 is followed by a zone having a larger clear width adapted to receive an axially movable piston (22).

15. A device according to any one of claims 6 to 14, characterized in that the axially movable piston (22) is 20 connected with an adjustment drive, particularly a stepper motor or geared motor including a rotary encoder (23), which is actuatable as a function of the signals transmitted by an optical detector (21).

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16. A device according to any one of claims 6 to 15, characterized in that an optical signal transmitter (20) is arranged in the region of the axial zone of light-transparent material and designed for the detection of the meniscus of the condensed liquid, and that the adjustment drive of the piston 30 (22) is actuatable for the correction of the position of the meniscus.

17. A device according to any one of claims 6 to 16, characterized in that the distillation apparatus is made of 35 special steel, brass or titanium, and the sample dish (7) is made of metal, preferably aluminum or copper.

18. A device according to any one of claims 6 to 17, characterized in that a pressure sensor, particularly a piezoresistive pressure sensor, is provided for the determination of the air pressure, and that the distillation 5 apparatus in the region of the condenser (15) is designed with an open connection to the atmosphere.

19. A device according to any one of claims 6 to 18, characterized in that a weighing means designed for the 10 weighing of the distillation residue of the sample amount is arranged within the housing.

20. A device according to any one of claims 6 to 19, characterized in that the measuring values are fed via lines 15 to a microprocessor designed for the evaluation and calculation of measuring results, and that a display or output means for the measuring results is provided.